

# Aquatrak Absolute Liquid Level Sensor & Controller



## Overview

The Aquatrak Sensor calculates the true average level even in the presence of waves and surging liquid surfaces. The Sensor can be configured via its communication ports for virtually any site-unique conditions. The sample rates, number of samples averaged, and data requested are selectable. Continuous measurements or exclusive data sets without outlier bias are standard operating modes.

## Features

### TECHNOLOGY

Unique patented means of ratiometric time comparisons of sequential sonic/pressure pulses. Environmentally protected within a small diameter tube. Aquatrak provides performance unequaled in the industry.

### ACCURACY

Self-calibrated measurement correction for ambient temperature, pressure, and gas density within the calibrated range(s), yields an accuracy of better than  $\pm 3$  mm. The 4100 controller is enclosed in a gasketed, epoxy coated cast aluminum box. The stainless steel transducer is sealed in silicone within shock-resistant PVC.

### RELIABILITY

Non-mechanical implementation without bushings, bearings, gears, floats, or immersed active elements. Aquatrak sensors have a field proven reliability record of better than 1,000,000 hours MTBF. The lightweight sensor and range tube assembly are easily mounted at any angle from which the tube is immersed to the lowest significant level with minimal site preparation. Controller to transducer separation up to 1,000 feet

### VERSATILITY

The all digital Aquatrak 4100 controller with its internal microcomputer relieves the host system of the liquid level measurement routines. RS-232 and SDI-12 or EIA 485 interfaces make it compatible with the most commonly used data loggers, computers, controllers, and modems.

### BATTERY POWERED

All CMOS circuitry draws less than 40 milliamps operating, under one milliamp quiescent. These products were designed specifically for continuous long term unattended data acquisition.

### DURABILITY

The 4100 controller is enclosed in a gasketed, epoxy coated cast aluminum box, the stainless steel transducer is sealed in silicone in shock resistant PVC.

### ECONOMICAL

The lightweight sensor and range tube assembly are easily mounted at any angle from which the tube is immersed to the lowest significant level with minimal site preparation. Controller to transducer separation up to 1,000 feet can be accommodated.

### WAVES AND SEA STATE

The US NOS standard averaging algorithm is used to determine the standard deviation for each data set. This value may be used in post



processing to determine the average wave height during the sample period. Optionally, Aquatrak can provide specific programming for the 4100 to directly provide this information.

## PRODUCT ENHANCEMENTS

The Aquatrak Sensor continues the tradition of accuracy and reliability of its predecessors. Added capabilities and features include:

- ✓ Repackaged as a single integrated unit. The electronics is now in the sensor head.
- ✓ Reduced power consumption.
- ✓ Includes three external temperature probes.
- ✓ Concurrent Measurements.



Watertight Connectors

Waterproof Connectors

**SPECIFICATIONS**

MEASUREMENT	
Dynamic Range	
Standard	>35 feet (10 meters)
Optional	>50 feet (15 meters)
Special	75 feet (23 meters)
Rate of Change	± 10 feet (± 3 m/sec.)
Units	English (Metric)
Resolution	0.001 feet (1 mm)
Rate Proportionate	1.2 - 2.4 per sec.
Rate Averaged 2 to 255	1.0 per second
Interval	Host Determined
ACCURACY	
Calibration	
Standard	± 0.025%
Optional	±0.01%
Non-linearity	± 0.02%
Precision, Repeatability	± 0.01 %
Stability, Drift, 1 year	0
Temperature Drift	< 1 ppm/°C
ELECTRICAL	
Voltage DC	12.5 ± 2 volts
Average Power	< 40 mA
Quiescent Current	< 1 mA
Operating Current	20 mW (4 sample average)
ASCII SERIAL COMMUNICATION	
EIA-485	Consult Factory
RS-232	N-8-1
SDI-12	E-7-1
Selectable Baud Rate	300 to 9600
ENVIRONMENTAL	
Operating Temperature	-40 to 55 °C
Humidity	-55 to 60 °C
Storage Temperature	0 to 100%
PHYSICAL	
Sensor Assembly	
Diameter	3.25 in (8.25 cm)
Height	9 in (22.8 cm)
Weight	2.5 lb (1.14 kg)
Shipping Weight (1 Carton)	5 lb (2.3 kg)

**ORDERING**

5600-0161	Aquatrak, Acoustic Water Level Transducer (also requires Controller, p/n 5100-0404)
	Specify Watertight or Waterproof Connectors
5100-0404	Aquatrak, Acoustic Water Level Controller

